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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.

EXAMINER	
Daniel L. Sellers	
ART UNIT	PAPER
	20061218

DATE MAILED: 20060306

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Office Action Summary	Application No.	Applicant(s)	
	10/058,045	WILCOCK ET AL.	
	Examiner	Art Unit	
	Daniel R. Sellers	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-3, 5, 6, 8, 9, 13-15, 17, 19-25, 29-31, 33, 35-41, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Slezak and Cragun, U.S. Pat. No. 5,461,399.

3. Regarding claim 1, Slezak teaches an audio user-interfacing method, wherein a synthesized sound source, representing a cursor, is moved in the audio field (Col. 9, lines 26-48). Slezak teaches item-representing sound sources (Col. 7, line 62 – Col. 8, line 17). However Slezak does not teach a cursor, wherein an audible indication is modified when the cursor comes close to an item-representing sound source. Cragun teaches that an audible indication is modified when a cursor comes close to an item-representing sound source, wherein the sound emanates from at least one of the item-representing sound source and the cursor (Col. 6, lines 14-17 and Col. 6, line 55 – Col. 7, line 24).

4. Regarding claim 2, the further limitation of claim 1, Cragun teaches audible indications that vary with changes in distance between sound source and the cursor (Col. 7, lines 19-24).

5. Regarding claim 3, the further limitation of claim 2, Cragun teaches that the audible indication is updated continuously with the cursor position (Col. 7, line 64 – Col. 8, line 13).

6. Regarding claim 5, the further limitation of claim 1, Cragun teaches a method that produces audible indications of direction, wherein the indication is indicative of the direction of the item-representing sound source from the cursor (Col. 7, lines 34-45 and Col. 10, lines 9-15).

7. Regarding claim 6, the further limitation of claim 5, Cragun teaches the feature of continuously varying an audio characteristic (see the preceding argument with respect to claim 2 and Col. 10, lines 4-8).

8. Regarding claim 8, the further limitation of claim 1, see the preceding argument with respect to claims 2 and 5. The combination teaches the features of location by direction and distance within spatialized audio.

9. Regarding claim 9, the further limitation of claim 1, Cragun teaches that the audible indication is provided solely through modifying the sounds emanating from the item-representing sound source (Col. 9, lines 3-38 and lines 56-63).

10. Regarding claim 13, the further limitation of claim 1, Cragun teaches that a first, non-varying, element indicative of the general proximity of the cursor to an item-representing sound source (Col. 9, lines 14-38) and a second, continuously variable, element indicating distance (Col. 7, lines 19-24).

11. Regarding claim 14, the further limitation of claim 1, Cragun teaches that the user can control the cursor (Col. 6, lines 50-54).

12. Regarding claim 15, the further limitation of claim 1, Cragun teaches item-representing sound sources arranged in groups (Col. 10, lines 16-28) with a respective audio-field reference to which they are positioned, and wherein the audio-field

references are independently movable relative to a presentation reference determined by a mounted configuration of audio output devices (Col. 9, line 64 - Col. 10, line 15 and Col. 7, lines 39-42). Cragun also teaches a user-controlled movement of the cursor in the audio field. Slezak teaches cursor sound source that is associated with another audio-field reference (Col. 9, lines 26-48).

13. Regarding claim 17, the further limitation of claim 1, see the preceding argument with respect to claim 1. The combination teaches a three-dimensional sound field, wherein it is inherent that the audio cues account for azimuth, elevation, and depth.

14. Regarding claim 19, the further limitation of claim 1, see Slezak

... including the further step of selecting an item by aligning the audio cursor with the corresponding item-representing sound source and providing a selection command input. (Col. 7, line 62 – Col. 8, line 8)

Slezak teaches that a selection can be chosen with the cursor.

15. Regarding claim 20, the further limitation of claim 19, see the preceding argument with respect to claim 1, the combination teaches audio labels for services, wherein a service is selected by selecting the audio label with the audio cursor.

16. Regarding claim 21, see the preceding argument with respect to claim 1. The combination of Slezak and Cragun teaches an apparatus comprising a rendering position determining means (Cragun, Fig. 2, units 52, 54, 60, and 64 and Fig. 5b, step 116), a cursor control means (Slezak, Col. 9, lines 26-48), a rendering means (Slezak, Fig. 10, unit 294 and the corresponding circles), and a cursor proximity means (Cragun, Col. 7, lines 19-24).

17. Regarding claim 22, the further limitation of claim 21, see the preceding argument with respect to claim 2. The combination teaches these features.

18. Regarding claim 23, the further limitation of claim 21, see the preceding argument with respect to claim 5. The combination teaches these features.

19. Regarding claim 24, the further limitation of claim 21, see the preceding argument with respect to claim 8. The combination teaches these features.

20. Regarding claim 25, the further limitation of claim 21, see the preceding argument with respect to claim 9. The combination teaches these features.

21. Regarding claim 29, the further limitation of claim 21, see the preceding argument with respect to claim 13. The combination teaches these features.

22. Regarding claim 30, the further limitation of claim 21, see the preceding argument with respect to claim 14. The combination teaches these features.

23. Regarding claim 31, the further limitation of claim 21, Slezak teaches means for setting the location of the cursor sound (Col. 9, lines 45-48 and Fig. 1, unit 42), user input means (Col. 9, line 49 – Col. 10, line 19), and Cragun teaches means for deriving the rendering positions (Col. 7, lines 34-52).

24. Regarding claim 33, the further limitation of claim 21, see the preceding argument with respect to claim 17. The combination teaches these features.

25. Regarding claim 35, the further limitation of claim 21, see the preceding argument with respect to claim 19. The combination teaches these features.

26. Regarding claim 36, the further limitation of claim 35, see the preceding argument with respect to claim 20. The combination teaches these features.

27. Regarding claim 37, see the preceding argument with respect to claim 21. The combination teaches these features.

28. Regarding claim 38, the further limitation of claim 37, see the preceding argument with respect to claim 22. The combination teaches these features.

29. Regarding claim 39, the further limitation of claim 37, see the preceding argument with respect to claim 23. The combination teaches these features.

30. Regarding claim 40, the further limitation of claim 37, see the preceding argument with respect to claim 24. The combination teaches these features.

31. Regarding claim 41, the further limitation of claim 37, see the preceding argument with respect to claim 25. The combination teaches these features.

32. Regarding claim 45, the further limitation of claim 37, see the preceding argument with respect to claim 29. The combination teaches these features.

33. Regarding claim 46, the further limitation of claim 37, see the preceding argument with respect to claim 30. The combination teaches these features.

34. Claims 4, 7,11, 18, 27, 34, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Slezak and Cragun as applied to claim 2 above, and further in view of Balabanovic, U.S. Pat. No. 6,624,826.

35. Regarding claim 4, the further limitation of claim 2, see Balabanovic

...,wherein said audible indication is varied by changing a spoken element to indicate the distance between said item-representing sound source and the cursor. (Col. 13, line 43 – Col. 14, line 14)

The combination teaches the features of claim 2, and teaches that audible indications are varied to indicate distance. However, the combination does not teach a spoken

element to indicate distance. Balabanovic teaches a browsing system wherein a three-dimensional audio space can be explored and teaches that the loudness can be varied proportional to the distance from the sound source. It would have been obvious for one of ordinary skill in the art to combine the teachings of Slezak, Cragun, and Balabanovic for the purpose of creating an easier to use interactive multimedia system.

36. Regarding claim 7, the further limitation of claim 5, see the preceding argument with respect to claim 4.

37. Regarding claim 11, the further limitation of claim 8, see the preceding argument with respect to claims 8 and 4. The combination teaches a system that provides for three-dimensional spatial cues, wherein Balabanovic teaches a proximity system, wherein the audio is changed depending on varying levels of distance (Col. 13, lines 34-40).

38. Regarding claim 18, the further limitation of claim 1, Balabanovic teaches a threshold distance (Col. 13, lines 34-40 and Fig. 7), and the combination of Slezak and Cragun teaches user movable sound sources, so it would have been obvious to allow the user to control the thresholds in the combination so as to provide a customizable interface.

39. Regarding claim 27, the further limitation of claim 24, see the preceding argument with respect to claim 11. The combination of Slezak, Cragun, and Balabanovic teaches these features.

40. Regarding claim 34, the further limitation of claim 21, see the preceding argument with respect to claim 18. The combination teaches these features.

41. Regarding claim 43, the further limitation of claim 40, see the preceding argument with respect to claim 11. The combination teaches these features.

42. Claims 10, 26, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Slezak and Cragun as applied to claim 1 above, and further in view of McKiel, Jr., U.S. Pat. No. 5,374,924 (hereinafter McKiel).

43. Regarding claim 10, the further limitation of claim 1, see Slezak

... wherein said audible indication is provided solely through modifying the sounds emanating from the cursor. (Col. 9, lines 29-48)

44. The combination teaches the features of claim 1, and Slezak teaches an audible indicator for just the cursor, however neither Slezak nor Cragun teach modifying the audible indication of the cursor. McKiel teaches an audible indicator which modifies the sounds emanating from the cursor (Col. 4, lines 8-23). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Slezak, Cragun, and McKiel for the purpose of providing a better user experience. The user experience is enhanced by feedback of the global position of the cursor within the audio field, thereby allowing users to find item-representing sound sources easier (McKiel, Col. 2, lines 56-69).

45. Regarding claim 26, the further limitation of claim 21, see the preceding argument with respect to claim 10. The combination teaches these features.

46. Regarding claim 42, the further limitation of claim 37, see the preceding argument with respect to claim 10. The combination teaches these features.

47. Claims 12, 28, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Slezak and Cragun as applied to claim 1 above, and further in view of Rohen, U.S. Pat. No. 5,186,629.

48. Regarding claim 12, the further limitation of claim 1, see Rohen

... wherein the said audible indication is used to signal to the user when the said item-representing sound source and cursor are coincident, at least in terms of their direction from a user reference location. (Col. 3, lines 1-11 and Col. 8, lines 19-29)

Slezak teaches the features of claim 1, however Slezak does not teach a sound indicator with these features. Rohen teaches an audible indicator when the a sound source and cursor are coincident. It would have been obvious for one of ordinary skill in the art to combine the teachings of Slezak, Cragun, and Rohen for the purpose of providing better accessibility to the handicapped.

49. Regarding claim 28, the further limitation of claim 21, see the preceding argument with respect to claim 12. The combination teaches these features.

50. Regarding claim 44, the further limitation of claim 37, see the preceding argument with respect to claim 12. The combination teaches these features.

51. Claims 16 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Slezak and Cragun as applied to claim 15 above, and further in view of admitted prior art, "Signal Processing, Acoustics, and Psychoacoustics for High Quality Desktop Audio" by Kyriakakis et al. (hereinafter Kyriakakis).

52. Regarding claim 16, the further limitation of claim 15, see Kyriakakis

... wherein the cursor-associated audio field reference is stabilised relative to one of:
a user's body;
a user's head;
this stabilisation taking account of whether audio output devices used to synthesise the sound sources are world, body or head mounted, and, as appropriate, rotation of the user's head or body. (pp. 56-59, Desktop Audio System with Head Tracking)

The combination of Slezak and Cragun teaches the features of claim 15, but does not teach a head tracking system. Kyriakakis teaches head tracking to compensate for the movements of a listener. It would have been obvious for one of ordinary skill in the art to combine the teachings of Slezak, Cragun, and Kyriakakis for the purpose of stabilizing the sound field. One of ordinary skill at the time of the invention can recognize that it would be advantageous to stabilize the sound field with respect to the location or position of the head of the user, so that a user can find a comfortable posture and still have the same indication of distance between the cursor and the item-representing sound sources.

53. Regarding claim 32, the further limitation of claim 31, see the preceding argument with respect to claims 16 and 31. The combination teaches these features.

Response to Arguments

54. Applicant's arguments filed December 19, 2005 have been fully considered but they are not persuasive.

55. Applicant's arguments with respect to claims 1-46 have been considered but are moot in view of the new ground(s) of rejection. Claims 1-46 are rejected under 35 USC 103.

Conclusion

56. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel R. Sellers whose telephone number is 571-272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DRS

SINH TRAN
SUPERVISORY PATENT EXAMINER